

In the Claims

1. (Previously Presented) A high-power quick connector assembly comprising:
a first connector having a stem portion and a collar portion connectable to a welding cable, the stem portion having a shank segment extending an axial length of the stem portion and a threaded segment; and
a second connector having a recess formed therein, the recess constructed to receive the stem portion of the first connector and engage the shank segment and the threaded segment.
2. (Original) The high-power quick connector assembly of claim 1 wherein the stem portion of the first connector further comprises a pair of planar surfaces truncating opposing sides of the stem portion.
3. (Original) The high-power quick connector assembly of claim 1 wherein the first connector is rotatable relative to the second connector.
4. (Original) The high-power quick connector assembly of claim 3 wherein the first connector is rotatable relative to the second connector by approximately 90 degrees.
5. (Original) The high-power quick connector assembly of claim 1 further comprising a plurality of threaded holes formed in the collar portion of the first connector.
6. (Original) The high-power quick connector assembly of claim 1 wherein the second connector further comprises a threaded section formed about a distal end of the recess.
7. (Previously Presented) The high-power quick connector assembly of claim 1 wherein the recess of the second connector further comprises a generally circular section constructed to receive the shank segment of the first connector.
8. (Original) The high-power quick connector assembly of claim 1 incorporated into a welding-type device wherein the first connector is attached to a welding cable and the second connector is rigidly attached to the welding-type device.

9. (Original) The high-power quick connector assembly of claim 1 wherein at least one of the first connector and the second connector are constructed from at least one of a tellurium copper material, a sulfur copper material, and a chromium copper material.

10. (Original) The high-power quick connector assembly of claim 1 wherein the assembly is constructed to maintain a temperature change of less than approximately 40 degrees when subjected to a current of approximately 700 amps.

11. (Previously Presented) The high-power quick connector assembly of claim 1 further comprising at least one shoulder extending about the shank segment of the stem portion of the first connector.

12. (Previously Presented) The high-power quick connector assembly of claim 11 wherein the recess of the second connector has a groove formed thereabout constructed to engage the at least one shoulder of the shank segment of the first connector.

13. (Previously Presented) The high-power quick connector assembly of claim 11 wherein the recess of the second connector has a first diameter similar to a diameter proximate the at least one shoulder of the shank segment of the first connector and a second diameter similar to a diameter of the threaded segment of the stem portion of the first connector, wherein the first diameter of the recess is greater than the second diameter of the recess.

14. (Previously Presented) The high-power quick connector assembly of claim 11 wherein the at least one shoulder of the stem portion mechanically and electrically connects the stem portion of the first connector to the second connector and the threaded segment of the stem portion of the first connector mechanically and electrically connects the stem portion of the first connector to the second connector.

15. (Original) The high-power quick connector assembly of claim 14 wherein the recess of the second connector further comprises a threaded portion having at least one channel formed thereacross, the at least one channel constructed to allow the at least one shoulder to pass therethrough.

16-18. (Canceled)

19. (Original) A quick connector assembly for a welding-type device comprising:
a cable adapter connectable to a welding cable and having a cable end and a welding device end;

a device adapter constructed to engage the welding device end of the cable adapter and comprising:

a body having a first end and a second end;

a recess extending into the body from the first end;

a threaded section formed in the recess proximate the first end;

a smooth section formed in the recess between the threaded section and the second end.

20. (Original) The quick connector assembly of claim 19 wherein at least one of the cable adapter and the device adapter are at least partially constructed from at least one of a tellurium copper alloy, a sulfur copper alloy, and a chromium copper alloy.

21. (Original) The quick connector assembly of claim 19 wherein the device adapter further comprises another recess extending into the body from the second end and fluidly connected to the first recess.

22. (Original) The quick connector assembly of claim 21 wherein the body of the device adapter further comprises a first threading formed about an outside surface about the second end and a second threading formed about a circumference of the another recess.

23. (Canceled)

24. (Original) The quick connector assembly of claim 19 wherein the device adapter further comprises a ledge formed in the recess generally between the threaded section and the smooth section.

25. (Original) The quick connector assembly of claim 19 wherein the device adapter further comprises a first channel and a second channel extending axially through the threaded section formed in the recess.

26. (Original) The quick connector assembly of claim 25 wherein the first and second channels are on generally opposite sides of the threaded section of the recess.

27. (Original) The quick connector assembly of claim 19 wherein the welding device end of the cable adapter further comprises an unthreaded portion and a threaded portion.

28. (Original) The quick connector assembly of claim 27 wherein the unthreaded portion is closer to an end of the cable adapter than the threaded portion.

29. (Original) The quick connector assembly of claim 19 wherein the device adapter is constructed to be connected to a device capable of outputting a power signal suitable for welding and the cable adapter is arranged to communicate the power signal to the welding cable.

30. (Original) The quick connector assembly of claim 29 wherein the power signal suitable for welding is capable of sustained currents of approximately 700 amps.

31. (Original) The quick connector assembly of claim 19 wherein the cable adapter and the device adapter are fully connectable within one wrist-turn rotation therebetween.

32. (Original) The quick connector assembly of claim 19 wherein the threaded section of the recess of the device adapter has a pair of channels extending across the threaded section, the channels having a diameter similar to a diameter of the smooth section formed in recess and less than an inner diameter of the threaded section.

33. (Original) The quick connector assembly of claim 19 wherein the welding device end of the cable adapter includes a shouldered shank at an end thereof and a threaded section between the shouldered shank and the cable end of the cable adapter.

34. (Original) The quick connector assembly of claim 33 wherein the shouldered shank includes a pair of shoulders extending from generally opposite sides thereof.

35. (Original) The quick connector assembly of claim 33 further comprising a pair of planar surfaces extending along generally opposite sides of the shouldered shank and the threaded section of the cable adapter.

36. (Original) The quick connector assembly of claim 33 wherein the shouldered shank of the cable adapter is constructed to pass uninterruptingly across the threaded section of the device adapter and engage the smooth section upon rotation therebetween.

37. (Original) The quick connector assembly of claim 33 wherein an outer diameter of the shouldered shank is greater than an outer diameter of the threaded section of the cable adapter and is greater than an inner diameter of the threaded section of the device adapter.

38-60. (Canceled)

61. (Original) A high-power quick connector assembly for a welding-type apparatus comprising:

means for receiving a weld cable;

means for connecting the receiving means to a power source, the means for connecting including:

first attaching means having a contact surface area; and

second attaching means having a contact surface area that is greater than the contact surface area of the first attaching means.

62. (Original) The high-power quick connector assembly of claim 61 wherein the second attaching means includes a plurality of threads about the contact surface area of the second attaching means.

63. (Original) The high-power quick connector assembly of claim 61 wherein the receiving means further comprises first securing means for engaging the first attaching means and second securing means for engaging the second attaching means.

64. (Original) The high-power quick connector assembly of claim 61 wherein at least one of the receiving means, connecting means, attaching means, and engaging means are constructed from a material capable of carrying 700 amps with less than a 40 degree temperature increase.

65. (Original) The high-power quick connector assembly of claim 63 wherein the contact surface area of the first attaching means is generally smooth and has at least one lip extending about a circumference at an end thereof.

66. (Original) The high-power quick connector assembly of claim 65 wherein the at least one lip of the first attaching means is constructed to engage the first securing means and the second securing means has a plurality of threads formed thereabout constructed to engage a plurality of threads formed about the second attaching means.

67. (Original) The high-power quick connector assembly of claim 61 wherein the first attaching means has a diameter that is larger than a common diameter of the second attaching means and is located further from an end of the connecting means than the second attaching means.

68-69. (Canceled)

70. (Currently Amended) A connector assembly comprising:

a cable connector connectable to a weld cable;

an output connector electrically connectable to a power source configured to generate a power signal suitable for welding applications;

an insulator positioned about the output connector and constructed to be secured to a housing positioned about the power source, the insulator including a first body having a boss and a second body having a recess, the boss of the first body constructed to engage the housing and be snugly received in the recess of the second body; and

wherein at least one of the cable connector and output connector are constructed from at least one of a tellurium copper material, a sulfur copper material, and a chromium copper material

71. (Original) The connector assembly of claim 70 wherein the output connector is engageable with the cable connector from an initial position to a fully engaged position in less than 180 degrees of rotation.

72. (Original) The connector assembly of claim 70 wherein the power source is constructed to generate a power signal suitable for welding with up to approximately 700 amps.

73. (Original) The connector assembly of claim 70 wherein the output connector has a path formed therethrough constructed to circulate a cooling flow through the connector assembly.

74-75. (Canceled)

76. (Original) The connector assembly of claim 70 wherein the cable connector further comprises a cable portion connectable to the weld cable and a stud portion engageable with the output connector, the stud portion having an unthreaded portion and a threaded portion.

77. (Original) The connector assembly of claim 73 wherein the output connector further comprises an unthreaded portion constructed to engage the unthreaded portion of the cable connector and a threaded portion constructed to engage the threaded portion of the cable connector.

78. (Original) The connector assembly of claim 77 wherein the unthreaded portion of the cable connector further comprises a pair of shoulders extending therefrom constructed to snugly engage the unthreaded portion of the output connector upon rotation therebetween.

79. (Original) The connector assembly of claim 78 wherein the threaded portion of the output connector further comprises a pair of channels constructed to allow uninterferred passage of the pair of shoulders of the cable connector through the threaded portion of the output connector.

80. (Original) The connector assembly of claim 78 wherein the cable connector is not rotatable relative to the output connector when the pair of shoulders are generally aligned with the threaded portion of the output connector.

81. (Original) The connector assembly of claim 78 wherein an outer diameter of the pair of shoulders is greater than an outer diameter of the threaded portion of the stud portion of the cable connector.

82-84. (Canceled)

85. (Original) A weld-power quick connector comprising:
a receptacle having a recess formed therein;
a cable connector constructed to connect to a weld cable;
a stud extending from the cable connector constructed to be received in the recess of the receptacle, the stud having a threaded portion and a shoulder portion wherein the shoulder portion is located closer to an end of the cable connector than the threaded portion and has a diameter that is greater than an outer diameter of the threaded portion.

86. (Original) The weld-power quick connector of claim 85 wherein the recess has a threaded section and smooth section wherein the threaded section is located closer to an end of the receptacle than the smooth section.

87. (Original) The weld-power quick connector of claim 85 wherein the threaded section of the recess engages the threaded portion of the stud and the smooth section engages the shoulder portion of the stud upon rotation of the cable connector relative to the receptacle thereby receiving the cable connector to the receptacle.

88. (Original) The weld-power quick connector of claim 86 further comprising at least one channel formed in the threaded section of the recess constructed to allow passage of the shoulder portion of the stud therethrough.

89. (Original) The weld-power quick connector of claim 85 wherein a pair of generally planar surfaces truncate generally opposite sides of the stud of the cable connector.

90. (Original) The weld-power quick connector of claim 85 wherein the cable connector is engageable with the receptacle from an inserted position to a locked position with a single-grip rotation therebetween.

91. (Original) The weld-power quick connect of claim 85 wherein the shoulder portion of the stud has an outer diameter that is greater than an inner diameter of a threaded section of the recess of the receptacle and is engageable therebehind.

92. (Original) The weld-power quick connector of claim 85 wherein at least one of the receptacle and cable connector are constructed from a tellurium copper material.

93. (Original) A high-power quick connector assembly comprising:
a receiver configured to be connected to a welding-type device and having a first tubular section having a diameter and a second tubular section having a diameter greater than the diameter of first tubular section;

a plug constructed to be connected to a weld cable and having a stud, the stud having a first outer diameter substantially similar to the diameter of the first tubular section of the receiver, and a second outer diameter substantially similar to the diameter of the second tubular section of the receiver, the second outer diameter of the stud having a plurality of threads formed thereabout.

94. (Original) The high-power quick connector assembly of claim 93 further comprising a plurality of threads formed about the second tubular section of the receiver and constructed to engage the plurality of threads of the stud.

95. (Original) The high-power quick connector assembly of claim 94 wherein rotation of the plug relative to the receiver engages the threads of the receiver with the threads of the plug in a locking fashion.

96. (Currently Amended) The high-power quick connector assembly of claim 93 wherein the ~~plug~~ receiver is rotatable relative to the plug by approximately 90 degrees.

97-98. (Canceled)

99. (Original) The high-power quick connector assembly of claim 93 wherein the threads about the second outer diameter of the stud are truncated on opposing sides of the second outer diameter.

100. (Canceled)

101. (Original) The high-power quick connector assembly of claim 93 wherein the plug further comprises an orifice constructed to receive the weld cable therein.

102. (Original) The high-power quick connector assembly of claim 93 wherein the welding-type device is capable of generating a sustained current of 700 amps.

103. (Original) The high-power quick connector assembly of claim 102 wherein the second outer diameter of the stud has a greater surface area than the first outer diameter of the stud.

104. (Original) The high-power quick connector assembly of claim 93 wherein the plug is rotatable relative to the receiver from an initial position to a fully engaged position upon approximately 90 degrees of rotation wherein rotation of the plug engages the plurality of threads of the plug with a plurality of threads of the receiver.

105. (Original) The high-power quick connector assembly of claim 93 wherein at least one of the plug and receiver are constructed from a material having conductivity characteristics generally similar to copper and machineability characteristics generally similar to brass.

106. (Previously Presented) A quick-connect connector assembly comprising:
a first connector electrically connectable to a second connector and securable thereto upon rotation of one of the first connector and the second connector relative to the other of the first connector and the second connector and wherein at least one of the first and the second

connector are constructed from a material having an electrical conductivity of at least 80% of that of copper and having a machineability of at least 75% of that of brass.

107. (Original) The quick-connect connector assembly of claim 106 wherein the material has a yield strength of at least 40 Kpsi.

108. (Original) The quick-connect connector assembly of claim 106 wherein the first connector rotatably engages the second connector from an insert position to a fully engaged position in less than approximately 180 rotational degrees from the insert position.

109. (Canceled)